

CLAIMS

1. (Currently Amended) An emission amount notifying device comprising:
detecting means (40) for detecting an emission amount of a predetermined substance emitted from a vehicle;
converting means (22) for converting the emission amount detected by the detecting means to a number of unit(s); and
notifying means (42) for notifying of the number of unit(s) obtained by the conversion.
2. (Currently Amended) An emission amount notifying device comprising:
detecting means (40) for detecting an emission amount of a predetermined substance emitted from a vehicle;
calculating means (22) for calculating the emission amount corresponding to a difference between the emission amount detected by the detecting means and a standard value; and
notifying means (42) for notifying of the calculated emission value.
3. (Currently Amended) An emission amount notifying device comprising:
detecting means (40) for detecting an emission amount of a predetermined substance emitted from a vehicle;
storing portion (26) for storing an amount of money corresponding, in advance, to the emission amount;
obtaining means (22) for obtaining from the storing portion the amount of money corresponding to the emission amount detected by the detecting means; and
notifying means (42) for notifying of the obtained amount of money.
4. (Currently Amended) The emission amount notifying device according to claim 1, 2 or 3, wherein
said notifying means includes a display device (42).

5. (Original) The emission amount notifying device according to claim 1, 2 or 3, wherein said predetermined substance includes one or more of a carbon dioxide, nitrogen oxides, sulphur oxides and hydrocarbons.

6. (Currently Amended) The emission amount notifying device according to claim 1, 2 or 3, further comprising:

sending means ~~(30)~~ for sending information related to the emission amount detected by said detecting means.

7. (Currently Amended) An emission charging system for a vehicle comprising:
an engine operation state detecting means ~~(114)~~ for detecting stop/drive of an engine on the vehicle;

wireless communication means ~~(122)~~ mounted on said vehicle and connected to a communication network; and

a management unit ~~(115)~~ connected to said communication network, and charging for emissions of said vehicle, wherein

said management unit performs the charging according to an amount of the emissions of said vehicle based on engine drive information provided from said engine operation state detecting means.

8. (Currently Amended) The emission charging system for the vehicle according to claim 7, wherein

said vehicle is provided with run/stop detecting means ~~(113)~~, and said system calculates an idling duration, an amount of the emissions corresponding to the idling duration and an amount of a charge for the amount of the emissions from said vehicle-stop information provided from said run/stop detecting means and said engine drive information.

9. (Currently Amended) The emission charging system for the vehicle according to claim 8, wherein

said run/stop detecting means ~~(113)~~ includes at least one of a vehicle speed sensor, a GPS (Global Positioning System) and an acceleration sensor.

10. (Original) The emission charging system for the vehicle according to claim 7, wherein

conditions for setting an amount of the charge include an engine displacement, vehicle position information and/or an ambient temperature at the vehicle position.

11. (Currently Amended) The emission charging system for the vehicle according to claim 10, wherein

said ambient temperature at said vehicle position is determined by temperature detecting means ~~(126)~~ on said vehicle, or is determined from global temperature information based on the vehicle position information provided from said GPS.

12. (Original) The emission charging system for the vehicle according to claim 11, wherein

warning about a failure is sent to a driver of said vehicle when the failure occurs in any one of said engine operation state detecting means, said wireless communication means, said run/stop detecting means and said temperature detecting means mounted on said vehicle.

13. (Currently Amended) The emission charging system for the vehicle according to claim 7, wherein

said vehicle includes display means ~~(224)~~, and

said management unit sends an amount of money to be charged to said vehicle via said communication network and said wireless communication means to said vehicle, and said display means displays the charged amount of money.

14. (Original) The emission charging system for the vehicle according to claim 7, wherein

said charged amount of money is deducted from an account managed by a manager of said vehicle.

15. (Currently Amended) An vehicle emission charging system comprising:

a vehicle-mounted device (212) having idling detecting means (229) for detecting an idling state of a vehicle, and wireless communication means (222) connected to a communication network;

a management unit (215) receiving the idling information obtained by said vehicle-mounted device over said communication network, and charging for emissions of the vehicle; and

a mobile inspection device (230) performing communication with said vehicle-mounted device over said communication network, and checking a normal operation of the vehicle-mounted device, wherein

said inspection device sends a vehicle ID to said management unit over said communication network, said management unit sends a connection ID for communication with said vehicle-mounted device to said inspection device based on the received vehicle ID, and said inspection device checks the normal operation of said vehicle-mounted device by establishing the communication with said vehicle-mounted device based on said connection ID.

16. (Currently Amended) An emission charging system for a vehicle comprising:

a vehicle-mounted device (212) ~~(222)~~ having idling detecting means (229) for detecting an idling state of a vehicle, wireless communication means (212) connected to a communication network, and short-range wireless communication means (223) not connected to the communication network;

a management unit (215) receiving the idling information obtained by said vehicle-mounted device over said communication network, and charging for emissions of the vehicle; and

an inspection device ~~(230)~~ communicated with said vehicle-mounted device by short-range wireless communication, and checking a normal operation of said vehicle-mounted device, wherein

said inspection device checks a normal operation of said vehicle-mounted device by performing the short-range wireless communication to communicate directly with said vehicle-mounted device located within a communication-allowed area from the vehicle.

17. (Currently Amended) The emission charging system for the vehicle according to claim 15 or 16, wherein penalties such as a fine and/or reduction of license points are imposed on a manager of the vehicle when said inspection device (230) determines an abnormal operation of said vehicle-mounted device (212).

18. (Currently Amended) The emission charging system for the vehicle according to claim 15 or 16, wherein
said vehicle includes display means (224), and
an amount of money charged to said vehicle is sent from said management unit (215) to said vehicle over said communication network, and said display means displays the charged amount of money.

19. (Original) The emission charging system according to claim 18, wherein
said charged amount of money is deducted automatically from a bank account designated by a manager of said vehicle, and, if the deduction is impossible due to an insufficient balance of the account, the management unit provides a notification to said vehicle-mounted device over said communication network to display warning by said display means.

20. (Original) The emission charging system for the vehicle according to claim 19, wherein
an extra charge is imposed when payment is impossible due to the insufficient balance of said account.

21. (Currently Amended) The emission charging system for the vehicle according to claim 15 or 16, wherein
said idling detecting means (229) includes engine operation state detecting means (214) for detecting stop/drive of an engine, and run/stop detecting means (213) for detecting a stop state of the vehicle, and
said idling detecting means (229) recognizes the idling state from engine drive information provided from said engine operation state detecting means and vehicle-stop information provided from said run/stop detecting means.

22. (Currently Amended) A management unit (~~115~~) capable of communication with a vehicle-mounted device (~~112~~) on a vehicle, comprising:

receiving means (~~S21~~) for receiving times of start and stop of idling of said vehicle from said vehicle-mounted device;

calculating means (~~S24~~) for calculating an amount of emissions during idling from said received idling start time and said received idling stop time, and calculating an amount of a charge corresponding to said amount of the emissions; and

sending means (~~S26~~) for sending the calculated amount of the charge to said vehicle-mounted device.

23. (Currently Amended) The management unit according to claim 22, further comprising:

obtaining means (~~S23~~) for sending the idling start time and the idling stop time to a server of a weather information center, and obtaining information about temperature change in a corresponding time zone, wherein

said calculating means determines a unit charge from the obtained temperature change information and a displacement of the vehicle.

24. (Currently Amended) The management unit according to claim 22, wherein said management unit further sends an instruction to a server of a banking organ to deduct said charged amount from an account of an owner of said vehicle (~~S25~~).

25. (Currently Amended) An inspection device comprising:

input means for inputting a vehicle ID;

sending means (~~S140~~) for sending said input vehicle ID to a management unit charging for emissions of a vehicle;

receiving means (~~S141~~) for receiving from said management unit a connection ID for communication with a vehicle-mounted device mounted on said vehicle in response to sending of said vehicle ID;

communication establishing means (~~S142~~) for establishing the communication with said

vehicle-mounted device by using the received connection ID; and

'determining means (~~S143~~) for checking a normal operation of said vehicle-mounted device by determining whether said communication establishing means established the communication or not.

26. (Currently Amended) A management unit comprising:

first receiving means (~~S120~~) for receiving a vehicle ID, an idling start time and an idling end time from a vehicle-mounted device mounted on a vehicle;

calculating means (~~S122~~) for calculating an amount of emissions during an idling duration from the received idling start time and the received idling stop time, and calculating an amount of a charge corresponding to the amount of the emissions;

a database (~~218~~) storing a log of the received idling start time, the received idling end time and the calculated amount of the charge for each of the received vehicle IDs;

second receiving means (~~S201~~) for receiving the vehicle ID, the idling start time and the idling end time of said vehicle from an inspection device capable of communication with said vehicle-mounted device; and

determining means (~~S203, S204~~) for determining whether said database has stored the log of the idling start time and the idling end time of the vehicle ID received from said inspection device or not.

27. (Currently Amended) The management unit according to claim 26, further comprising:

determination result sending means (~~S205, S206~~) for sending results of the determination performed by said determining means to said inspection device.